

What is claimed is:

1. A photoelectric encoder comprising:

a main scale with a grating;

a light receiving portion with an index grating and a
5 light receiving element, the light receiving portion capable
move relative to the main scale, the light receiving portion
detecting a bright/dark pattern obtained at least by the grating
of the main scale; and

a lens disposed between the main scale and the light
10 receiving portion,

wherein a magnification of an image is set by adjusting
distances among the lens, the main scale and the light receiving
portion.

15 2. The photoelectric encoder according to Claim 1,
wherein the light receiving portion is a light receiving element
array in which the index grating and the light receiving portion
are integrated with each other.

20 3. The photoelectric encoder according to Claim 1,
further comprising:

an aperture disposed at a position of a focal point of
the lens.

25 4. The photoelectric encoder according to Claim 1,

wherein the lens is a lens array.

5. The photoelectric encoder according to Claim 4,
further comprising:

5 an aperture array disposed at a position of a focal point
of the lens array.

6. The photoelectric encoder according to Claim 4,
further comprising:

10 a partition plate disposed between adjacent lenses of
the lens array.

7. The photoelectric encoder according to Claim 1,
wherein the main scale is of a reflection-type.

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8. The photoelectric encoder according to Claim 1,
further comprising:

a diffused light source,

wherein the lens serves also as a collimator lens.

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9. A photoelectric encoder comprising:

a main scale with a grating;

a light receiving portion with an index grating and a
light receiving element, the light receiving portion capable

25 move relative to the main scale, the light receiving portion

detecting a bright/dark pattern obtained at least by the grating
of the main scale; and

an aperture disposed between the main scale and the light
receiving portion,

5 wherein a magnification of an image is set by adjusting
distances among the aperture, the main scale and the light
receiving portion.

10 10. The photoelectric encoder according to Claim 9,
wherein the light receiving portion is a light receiving element
array in which the index grating and the light receiving portion
are integrated with each other.